



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

ST

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,054	07/23/2001	Mayumi Tomikawa	522.1921D	4839

21171 7590 08/29/2005
STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

MORAN, MARJORIE A

ART UNIT PAPER NUMBER

1631

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,054

Applicant(s)

TOMIKAWA ET AL.

Examiner

Marjorie A. Moran

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-11, 21 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-11, 21, and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

All objections and rejections not reiterated below are hereby withdrawn. Claims 5-11, 21, and 24-27 are pending. Claims 25-27 are newly added in the amendment filed 5/26/05, therefore rejections of these claims is necessitated by amendment.

Claim Rejections - 35 USC § 112, 1st paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5-11, 21 and 24-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a NEW MATTER rejection.

Generating a desired combination of correspondence based on a "predetermined minimized geometric distance", as recited in claims 5 and 25-27, is new matter. Applicant points to paragraphs 162 and 178-201 of the published application for support for the new limitations. These paragraphs correspond to pages 30-37 of the originally filed specification. Pages 30 and 32 disclose generating an optimum correspondence "in view of" a geometric *relationship* between point sets, but does not disclose a "predetermined minimized" geometric *distance*. Page 28 discloses minimizing root mean square distance (rmsd) values between corresponding elements of point sets, but does not disclose minimizing a general "geometric" distance. The originally filed

specification fails to teach any kind of "predetermined" minimized distance used to generate a combination of correspondence anywhere.

As neither the original claims or specification provide support for the newly recited limitations, and none is apparent, as set forth above, the claims recite new matter.

Claims 5-11, 21, and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This is a LACK OF ENABLEMENT rejection.

The factors to be considered in determining what constitutes undue experimentation were affirmed by the court in *In re Wands* (8 USPQ2d 1400 (CAFC 1986)). These factors are the quantity of experimentation; the amount of direction or guidance presented in the specification; the presence or absence of working examples; the nature of the invention; the state of the prior art; the level of skill of those in the art; predictability or unpredictability of the art; and the breadth of the claims.

A method or apparatus comprising a step or means for generating a combination of correspondence satisfying a condition, as recited in claims 5, 21 and 24-27, is not enabled as neither the specification nor prior art provide guidance for how to determine if a combination of correspondence "satisfies" a condition. The instant specification discloses/exemplifies on pages 27 et seq. various methods of analyzing three dimensional structures. The specification admits on page 29 that merely comparing two data sets (i.e. merely generating a "combination of correspondence" between two data sets) renders it "nearly impossible" to effect a calculation (of rmsd?) since so many

Art Unit: 1631

combinations are possible. The disclosure of the specification, therefore, indicates that some sort of "condition" must be met in order to enable the inventive method. Pages 30 and 32 then disclose that an "optimum combination" must be generated "in view of" a geometric relationship within the data sets, a threshold value condition, and an attribute of points. These disclosures are now reflected in the claims as a limitation of a condition. However, the specification still does not teach how to determine if these "conditions" are met or "satisfied" by a combination of correspondence (i.e. comparison of data). Rather, it appears that the "conditions" of the specification are used to compare data sets, or *create* combinations of correspondence. Similarly, the conditions of the claims are limited to include "generating a desired combination..." The claims further recite that a "point is a candidate if" certain attribute falls into a recited category. A step of identifying a point is not interpreted to be the same as "satisfying" a condition. There is no disclosure for how to determine what requirements must be met in order to determine if a particular combination (comparison) "satisfies" the condition.

Figures 15 and 17 comprise flow charts which appear to correspond, at least in part, with the claimed method and apparatus. These Figures contain an box asking if a previous step "satisfies a restriction condition?" but neither Figure sets forth any step or means for determining what conditions are required in order to determine a "yes" or "no" answer. Figures 36 and 37 comprise flow charts which appear to reflect generating a correspondence of data based on conditions similar to those disclosed in the specification, and disclose particular equations for selecting data from a single data set BEFORE determining a correspondence with a second data set. The claims

Art Unit: 1631

specifically recite generating a combination of correspondence satisfying a condition BETWEEN elements of a first set and elements of a second set (of data), therefore Figures 36 and 37 do not appear to be a teaching for how to perform the claimed method or how to use the claimed apparatus.

The prior art of PANTOLIONO (IDS ref: US patent 4,853,871) teaches a method for analyzing and comparing three dimensional structures using 3D coordinates and calculation of root mean squares to determine fit; i.e. distance (col. 8, lines 32-65), but does not teach that any "conditions" must be met or satisfied in order to generate the comparison and/or perform the root mean square calculation.

The level of skill in the art is considered to be high. However, given the lack of guidance in either the specification or the prior art for how to determine whether a combination of correspondence between two point sets meets or satisfies a condition, and as one skilled in the art would be required to guess at the parameters necessary to perform such a determination or calculation, it would require undue experimentation by one skilled in the art to generate a combination of correspondence satisfying a condition.

Applicant's arguments filed 5/26/05 have been fully considered but they are not persuasive. In response to the argument on page 11 of the response that one skilled in the art would know how to combine selection of rmsd, comparison of attributes, and determination of whether a predetermined threshold value has been reached in order to provide an optimal combination, it is noted that none of the above parameters appear to be the "condition" which must be satisfied. The specification does not actually disclose

that these are "conditions" which are satisfied by generation of a combination of correspondence, but these are merely parameters used in the correspondence itself. If one or more of these parameters is, in fact, the condition to be satisfied, then one skilled in the art would still have to guess at the requirements for "satisfying" those conditions. Again, this constitutes undue experimentation.

For all of the reasons set forth above, the claims are rejected for lack of enablement.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 21 and 24-27 recite generating a combination of correspondence "satisfying" a condition. As set forth above, the specification does not disclose what requirements must be met in order for a combination of correspondence to "satisfy" a condition. The claims do not recite any such requirements. As the metes and bounds intended by applicant with regard to "satisfaction" of a condition are not defined by the specification or in the claims, applicant's intended limitations are unclear and the claims are indefinite.

Claims 5, 21, and 24-27 limit an attribute of an element of a first point set to include (comprise) a type of atom, an atomic group, "and" a molecule, hydrophobic property "or" a positive or negative charge... The combination of "and" and "or" lining the terms of the list renders it unclear whether the first point set is intended to comprise ALL of the attributes listed (as would be indicated by the term --and-- between the last

Art Unit: 1631

two elements of the list only), or any one of the attributes listed (as would be indicted by the term --or-- between the last two elements of the list only), or intends some combination of the attributes listed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Mon,Wed: 7-1:30; Tue,Thur: 7:30-6; Fri 7-3:30 EST.

Art Unit: 1631

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571)272-0718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marjorie A. Moran
Primary Examiner
Art Unit 1631

Marjorie A. Moran
8/16/05